

What is claimed is:

1. An unexpanded stent comprising a proximal end and a distal end in communication with one another, a tubular wall disposed between the proximal end and the distal end, the tubular wall having a longitudinal axis and a porous surface defined by a plurality of interconnecting struts, the stent being expandable upon the application of a radially outward force thereon to undergo plastic deformation to a maximum yield point when the tubular wall has a diameter of less than or equal to about 3.5 mm.
2. The unexpanded stent defined in claim 1, wherein the stent is expandable: from a first unexpanded position to a second pre-expanded position at which the stent has reached a point of plastic deformation; and from the second pre-expanded position to a third expanded position wherein the stent will undergo plastic deformation to a maximum yield point when the tubular wall has a diameter of less than or equal to about 3.5 mm.
3. The unexpanded stent defined in claim 2, wherein, in the second pre-expanded position, the stent has a diameter greater than about 1.1 mm.
4. The unexpanded stent defined in any one of claims 2-3, wherein, in the second pre-expanded position, the stent has a diameter sufficiently large for the stent to receive expansion means to further expand the stent.
5. The unexpanded stent defined in any one of claims 2-4, wherein, in the first unexpanded position, the stent has a diameter less than or equal to about 1.1 mm.
6. The unexpanded stent defined in any one of claims 2-4, wherein, in the first unexpanded position, the stent has a diameter in the range of from about 0.5 to about to about 1.1 mm.

7. The unexpanded stent defined in any one of claims 2-4, wherein, in the first unexpanded position, the stent has a diameter in the range of from about 0.5 to about to about 1.0 mm.

5 8. The unexpanded stent defined in any one of claims 1-7, wherein the tubular wall has a substantially circular cross-section.

9. The unexpanded stent defined in any one of claims 1-8, wherein the tubular wall is constructed of a plastically deformable material.

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10. An unexpanded stent comprising a proximal end and a distal end in communication with one another, a tubular wall disposed between the proximal end and the distal end, the tubular wall having a longitudinal axis and a porous surface defined by a plurality of interconnecting struts, the stent being expandable upon the application of a radially outward force thereon:

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from a first unexpanded position to a second pre-expanded position at which the stent has reached a point of plastic deformation; and

from the second pre-expanded position to a third expanded position wherein the stent will undergo plastic deformation to a maximum yield point when the tubular wall has a diameter of less than or equal to about 3.5 mm.

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11. The unexpanded stent defined in claim 10, wherein, in the second pre-expanded position, the stent has a diameter greater than about 1.1 mm.

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12. The unexpanded stent defined in any one of claims 10-11, wherein, in the second pre-expanded position, the stent has a diameter sufficiently large for the stent to receive expansion means to further expand the stent.

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13. The unexpanded stent defined in any one of claims 10-12, wherein, in the first unexpanded position, the stent has a diameter less than or equal to about 1.1 mm.

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14. The unexpanded stent defined in any one of claims 10-12, wherein, in the first unexpanded position, the stent has a diameter in the range of from about 0.5 to about to about 1.1 mm.
- 5 15. The unexpanded stent defined in any one of claims 10-12, wherein, in the first unexpanded position, the stent has a diameter in the range of from about 0.5 to about to about 1.0 mm.
- 10 16. The unexpanded stent defined in any one of claims 10-15, wherein the tubular wall has a substantially circular cross-section.
17. The unexpanded stent defined in any one of claims 10-16, wherein the tubular wall is constructed of a plastically deformable material.
- 15 18. A partially expanded stent comprising a proximal end and a distal end in communication with one another, a tubular wall disposed between the proximal end and the distal end, the tubular wall having a longitudinal axis and a porous surface defined by a plurality of interconnecting struts, the stent:
- 20 having been expanded by the application of a radially outward force thereon from a first unexpanded position to a second pre-expanded position at which the stent has reached a point of plastic deformation, and
- being further expandable upon the application of a radially outward force thereon from the second pre-expanded position to a third expanded position wherein the stent will undergo plastic deformation to a maximum yield point.
- 25 19. The unexpanded stent defined in claim 18, wherein, in the third expanded position of the stent, the maximum yield point is reached when the tubular wall has a diameter of less than or equal to about 3.5 mm.
- 30 20. A stent delivery kit comprising:
- a catheter;
- an expandable member disposed on the catheter; and

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5 a partially expanded stent disposed on the catheter, the stent comprising a proximal end and a distal end in communication with one another, a tubular wall disposed between the proximal end and the distal end, the tubular wall having a longitudinal axis and a porous surface defined by a plurality of interconnecting struts, the stent:

having been expanded by the application of a radially outward force thereon from a first unexpanded position to a second pre-expanded position at which the stent has reached a point of plastic deformation, and

10 being expandable upon the application of a radially outward force thereon from the second pre-expanded position to a third expanded position wherein the stent will undergo plastic deformation to a maximum yield point.

21. The stent delivery kit defined in claim 20, wherein, in the third expanded position of the stent, the maximum yield point is reached when the tubular wall has a diameter of less than or equal to about 3.5 mm.

22. The stent delivery kit defined in any one of claims 20-21, wherein the stent is mechanically mounted on the expandable member.

20 23. The stent delivery kit defined in claim 22, wherein the stent is crimped onto the expandable member.

24. A method for mounting an unexpanded stent on a catheter having an expandable member disposed thereon, the unexpanded stent comprising a proximal end and a distal end in communication with one another, a tubular wall disposed between the proximal end and the distal end, the tubular wall having a longitudinal axis and a porous surface defined by a plurality of interconnecting struts, the stent being expandable upon the application of a radially outward force thereon:

30 (i) expanding the unexpanded stent to a second pre-expanded position at which the stent has reached a point of plastic deformation to produce a partially expanded stent; and

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(ii) placing the partially expanded stent on the expandable member of the catheter.

25. The method defined in claim 24, wherein Step (i) comprises urging the stent over a mandrel in a direction substantially parallel to the longitudinal axis.

26. The method defined in claim 24, wherein Step (i) comprises pushing the stent over a mandrel in a direction substantially parallel to the longitudinal axis.

27. The method defined in claim 24, wherein Step (i) comprises pulling the stent over a mandrel in a direction substantially parallel to the longitudinal axis.

28. The method defined in any one of claims 26-27, wherein the mandrel is tapered.

29. The method defined in claim 24, wherein Step (i) comprises urging the stent over a die in a direction substantially parallel to the longitudinal axis.

30. The method defined in claim 24, wherein Step (i) comprises placing the stent over an expandable means, and thereafter expanding the stent to the second pre-expanded position.

31. The method defined in any one of claims 24-30, wherein Step (ii) comprises crimping the partially expanded stent on to the expandable member of the catheter.

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